

ABSTRACT OF THE DISCLOSURE

An adaptive controller adaptively controls a plurality of variable high frequency devices. A calculation part calculates a scalar function value  
5 by using a signal varied in accordance with impedances of the variable high frequency devices, a reference signal, and a predetermined scalar function. An impedance variation part creates a signal that sequentially varies the impedances of  
10 the variable high frequency devices. A determination part determines, when the impedance of one of the variable high frequency devices is varied, whether a direction in which the scalar function value is varied is in a predetermined sloped  
15 direction. The impedance variation part includes a first variation part that, when a decision result in the determination part is in the predetermined direction, creates a signal that further varies the impedance of the one of the variable high frequency  
20 devices in the predetermined sloped direction. The impedance variation part also includes a second variation part that, when the decision result in the determination part is not in the predetermined sloped direction, creates one of a signal that  
25 varies the impedance of the one of the variable high frequency devices in an oppositely sloped direction and a signal that varies the impedance of another one of the variable high frequency devices.